BOTANIST CONTRIBUTES TO BIRTH OF GENETICS

Erich Tschermak von Seysenegg was one of four generally credited with laying the foundation of genetics, the others being Mendel, deVries, and Correns. Tschermak, the son of the famous mineralogist Gustav Tschermak, was born on Nov. 15, 1871, in Vienna, Austria. He worked at the Rotvorwerk Farm near Freiberg, Saxony, and completed his education at the University of Halle (East Germany), receiving his doctorate in 1896. Tschermak joined the staff of the Hochschule für Bodenkultur in Vienna in 1901, and he spent his entire career there; he was professor in 1906 and Professor Ordinaire in 1909.

A translation of the first paper describing his work in genetics, published on the 50th anniversary of the rediscovery of Mendel's work, revealed Tschermak's motivation: "Stimulated by the experiments of Darwin on the effects of cross- and self-fertilization, I began, in the year 1898 to make hybridization experiments with *Pisum sativum.*"

In his work, he noted the recurrence of a 3:1 ratio of yellow to green-seeded peas when the parents were self-fertilized and a 1:1 ratio when green-seeded and wrinkled-seeded plants were fertilized with pollen from the crossbred plants. While writing up the results of his experiments, Tschermak saw a cross-reference to Mendel's work and had the paper sent to him from the library of the University of Vienna. Tschermak was surprised to find that Mendel's work with the garden pea duplicated his own and preceded it by about 34 years. In the same year (1900) in which Tschermak published his findings, Hugo deVries and Carl Erich Correns also reported their discovery of Mendel's papers.

These works placed genetics on a firm footing, and the contributions made by many biologists between 1875 and 1890 on the cellular basis of heredity set the stage for the real appreciation of Mendel's work. These workers clarified the nature of mitosis and meiosis and the behavior of the chromosomes during the two types of nuclear division as well as during the fertilization of the egg by sperm.

Tschermak's contributions, and those of the other three geneticists, have made effective genetic counseling possible today and have helped promote the understanding of the many diseases related to genetics and of the roles of dominant and recessive genes.

Tschermak died in 1962 in Vienna. He was honored as an outstanding plant geneticist on a stamp (Scott no. 913) issued by Austria in 1971 on the centenary of his birth.—M. A. Shampo and R. A. Kyle